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<110> EXELIXIS, INC

<120> Insect p53 Tumor Suppressor Genes and Proteins

<130> Insect p53 sequences

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<141> 2000-03-13

<150> EX99-001

<151> 1999-03-16

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<170> PatentIn Ver. 2.1

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<211> 1573

<212> DNA

<213> Drosophila melanogaster

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<212> PRT
<213> Drosophila melanogaster

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35 40 45

Gln Gly Leu Asn Ser Gly Asn Leu Met Gln Phe Ser Gln Gln Ser Val
50 55 60

Leu Arg Glu Met Met Leu Gln Asp Ile Gln Ile Gln Ala Asn Thr Leu
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Pro Lys Leu Glu Asn His Asn Ile Gly Gly Tyr Cys Phe Ser Met Val
85 90 95

Leu Asp Glu Pro Pro Lys Ser Leu Trp Met Tyr Ser Ile Pro Leu Asn
100 105 110

Lys Leu Tyr Ile Arg Met Asn Lys Ala Phe Asn Val Asp Val Gln Phe
115 120 125

Lys Ser Lys Met Pro Ile Gln Pro Leu Asn Leu Arg Val Phe Leu Cys
130 135 140

Phe Ser Asn Asp Val Ser Ala Pro Val Val Arg Cys Gln Asn His Leu
145 150 155 160

Ser Val Glu Pro Leu Thr Ala Asn Asn Ala Lys Met Arg Glu Ser Leu
165 170 175

Leu Arg Ser Glu Asn Pro Asn Ser Val Tyr Cys Gly Asn Ala Gln Gly
180 185 190

Lys Gly Ile Ser Glu Arg Phe Ser Val Val Pro Leu Asn Met Ser

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Arg Ser Val Thr Arg Ser Gly Leu Thr Arg Gln Thr Leu Ala Phe Lys
210 215 220

Phe Val Cys Gln Asn Ser Cys Ile Gly Arg Lys Glu Thr Ser Leu Val
225 230 235 240

Phe Cys Leu Glu Lys Ala Cys Gly Asp Ile Val Gly Gln His Val Ile
245 250 255

His Val Lys Ile Cys Thr Cys Pro Lys Arg Asp Arg Ile Gln Asp Glu
260 265 270

Arg Gln Leu Asn Ser Lys Lys Arg Lys Ser Val Pro Glu Ala Ala Glu
275 280 285

Glu Asp Glu Pro Ser Lys Val Arg Arg Cys Ile Ala Ile Lys Thr Glu
290 295 300

Asp Thr Glu Ser Asn Asp Ser Arg Asp Cys Asp Asp Ser Ala Ala Glu
305 310 315 320

Trp Asn Val Ser Arg Thr Pro Asp Gly Asp Tyr Arg Leu Ala Ile Thr
325 330 335

Cys Pro Asn Lys Glu Trp Leu Leu Gln Ser Ile Glu Gly Met Ile Lys
340 345 350

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Arg His Ala Asn Lys Leu Leu Ser Leu Lys Lys Arg Ala Tyr Glu Leu
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<211> 2600

<212> DNA

<213> Leptinotarsa decemlineata

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<211> 354

<212> PRT

<213> Leptinotarsa decemlineata

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Asp Glu Pro Thr Leu Asn Asp Leu Asn Tyr Ser Asn Ile Leu Asn Gly
35 40 45

Ser Ile Val Ala Asn Asp Asp Ser Lys Met Val His Leu Ile Phe Pro
50 55 60

Gly Val Gln Thr Ser Val Pro Ser Asn Asp Glu Tyr Asp Gly Pro Tyr
65 70 75 80

Glu Phe Glu Val Asp Val His Pro Thr Val Ala Lys Asn Ser Trp Val
85 90 95

Tyr Ser Thr Thr Leu Asn Lys Val Tyr Met Thr Met Gly Ser Pro Phe
100 105 110

Pro Val Asp Phe Arg Val Ser His Arg Pro Pro Asn Pro Leu Phe Ile
115 120 125

Arg Ser Thr Pro Val Tyr Ser Ala Pro Gln Phe Ala Gln Glu Cys Val
130 135 140

Tyr Arg Cys Leu Asn His Glu Phe Ser His Lys Glu Ser Asp Gly Asp
145 150 155 160

Leu Lys Glu His Ile Arg Pro His Ile Ile Arg Cys Ala Asn Gln Tyr
165 170 175

Ala Ala Tyr Leu Gly Asp Lys Ser Lys Asn Glu Arg Leu Ser Val Val
180 185 190

Ile Pro Phe Gly Ile Pro Gln Thr Gly Thr Glu Ser Val Arg Glu Ile
195 200 205

Phe Glu Phe Val Cys Lys Asn Ser Cys Pro Ser Pro Gly Met Asn Arg
210 215 220

Arg Ala Val Glu Ile Ile Phe Thr Leu Glu Asp Asn Gln Gly Thr Ile
225 230 235 240

Tyr Gly Arg Lys Thr Leu Asn Val Arg Ile Cys Ser Cys Pro Lys Arg
245 250 255

Asp Lys Glu Lys Asp Glu Lys Asp Asn Thr Ala Asn Thr Asn Leu Pro
260 265 270

His Gly Lys Lys Arg Lys Met Glu Lys Pro Ser Lys Lys Pro Met Gln
275 280 285

Thr Gln Ala Glu Asn Asp Thr Lys Glu Phe Thr Leu Thr Ile Pro Leu
290 295 300

Val Gly Arg His Asn Glu Gln Asn Val Leu Lys Tyr Cys His Asp Leu
305 310 315 320

Met Ala Gly Glu Ile Leu Arg Asn Ile Gly Asn Gly Thr Glu Gly Pro
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Glu Trp

<210> 5

<211> 1291

<212> DNA

<213> *Tribolium castaneum*

<400> 5

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<213> Tribolium castaneum

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20 25 30

Glu Asn Asn Val His Leu Val Asn Asp Asp Gly Glu Glu Glu Lys Tyr
35 40 45

Ser Asn Glu Ala Asn Tyr Thr Glu Ser Ile Phe Pro Pro Asp Gln Pro
50 55 60

Thr Asn Leu Gly Thr Glu Glu Tyr Pro Gly Pro Phe Asn Phe Ser Val
65 70 75 80

Leu Ile Ser Pro Asn Glu Gln Lys Ser Pro Trp Glu Tyr Ser Glu Lys
85 90 95

Leu Asn Lys Ile Phe Ile Gly Ile Asn Val Lys Phe Pro Val Ala Phe
100 105 110

Ser Val Gln Asn Arg Pro Gln Asn Leu Pro Leu Tyr Ile Arg Ala Thr
115 120 125

Pro Val Phe Ser Gln Thr Gln His Phe Gln Asp Leu Val His Arg Cys
130 135 140

Val Gly His Arg His Pro Gln Asp Gln Ser Asn Lys Gly Val Ala Pro
145 150 155 160

His Ile Phe Gln His Ile Ile Arg Cys Thr Asn Asp Asn Ala Leu Tyr
165 170 175

Phe Gly Asp Lys Asn Thr Gly Thr Arg Leu Asn Ile Val Leu Pro Leu
180 185 190

Ala His Pro Gln Val Gly Glu Asp Val Val Lys Glu Phe Phe Gln Phe

195

200

205

Val Cys Lys Asn Ser Cys Pro Leu Gly Met Asn Arg Arg Pro Ile Asp
210 215 220

Val Val Phe Thr Leu Glu Asp Asn Lys Gly Glu Val Phe Gly Arg Arg
225 230 235 240

Leu Val Gly Val Arg Val Cys Ser Cys Pro Lys Arg Asp Lys Asp Lys
245 250 255

Glu Glu Lys Asp Met Glu Ser Ala Val Pro Pro Arg Arg Lys Lys Arg
260 265 270

Lys Leu Gly Asn Asp Glu Arg Arg Val Val Pro Gln Gly Ser Ser Asp
275 280 285

Asn Lys Ile Phe Ala Leu Asn Ile His Ile Pro Gly Lys Lys Asn Tyr
290 295 300

Leu Gln Ala Leu Lys Met Cys Gln Asp Met Leu Ala Asn Glu Ile Leu
305 310 315 320

Lys Lys Gln Glu Gln Gly Gly Asp Asp Ser Ala Asp Lys Asn Cys Tyr
325 330 335

Asn Glu Ile Thr Val Leu Leu Asn Gly Thr Ala Ala Phe Asp
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<210> 7

<211> 508

<212> DNA

<213> *Tribolium castaneum*

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<211> 169

<212> PRT

<213> Tribolium castaneum

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Ser Ser Tyr Leu Ser Ala Pro Ile Phe Pro Pro Ser Glu Pro Leu Glu
35 40 45

Leu Cys Asn Thr Glu Tyr Pro Gly Pro Leu Asn Phe Glu Val Phe Val
50 55 60

Asp Pro Asn Val Leu Lys Asn Pro Trp Glu Tyr Ser Pro Ile Leu Asn
65 70 75 80

Lys Ile Tyr Ile Asp Met Lys His Lys Phe Pro Ile Asn Phe Ser Val
85 90 95

Lys Lys Ala Asp Pro Glu Arg Arg Leu Phe Val Arg Val Met Pro Met
100 105 110

Phe Glu Glu Asp Arg Tyr Val Gln Glu Leu Val His Arg Cys Ile Cys
115 120 125

His Glu Gln Leu Thr Asp Pro Thr Asn His Asn Val Ser Glu Met Val
130 135 140

Ala Gln His Ile Ile Arg Cys Asp Asn Asn Ala Gln Tyr Phe Gly
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Asp Lys Asn Ala Gly Lys Arg Leu Ser

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<210> 9

<211> 433

<212> DNA

<213> Heliothis virescens

<400> 9

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<213> Heliothis virescens

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20 25 30

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35 40 45

Ser Ser Thr Ser Gly Ile Gln Thr Glu Ile Ala Lys Asn Val Leu His
50 55 60

Ser Ser Arg Glu Ile Gly Thr Gln Gly Val Tyr Tyr Cys Gly Lys Val
65 70 75 80

Asp Met Ala Asp Ser Trp Tyr Ser Val Leu Val Glu Phe Met Arg Thr
85 90 95

Ser Ser Glu Ser Cys Ser His Ala Tyr Gln Phe Ser Cys Lys Asn Ser
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Cys Ala Thr Gly Ile Asn Arg Arg Ala Ile Ala Ile Phe Thr Leu
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<213> Drosophila melanogaster

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<210> 12
<211> 30
<212> DNA
<213> Drosophila melanogaster

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<210> 13
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<212> DNA
<213> Drosophila melanogaster

<400> 13 23
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<210> 14
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<212> DNA
<213> Drosophila melanogaster

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<210> 15
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<212> DNA
<213> Drosophila melanogaster

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<400> 16 28
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<213> Drosophila melanogaster

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23

<210> 18
<211> 27425
<212> DNA
<213> Drosophila melanogaster

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30

Phe Asn Pro Ile Leu Leu Asn Lys Tyr Ser Val Leu Glu Ala Leu Gly

35

40

45

Glu Leu Ile Pro Glu Leu Pro Ala Lys Gly Val Val Gln Met Lys Asn
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Ala Phe Phe His Lys Ala Leu Ile Met Leu Tyr Met Asp His Ser Leu
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Val Gly Asp Asp Thr His Met Arg Glu Ile Ile Lys Glu Gly Met Leu
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Thr Ser Ser Ser Pro Ser His Arg Lys Leu Ser Thr His Asp Leu Pro
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Ala Ser Leu Pro Leu Ser Ile Ile Lys Ala Phe Pro Lys Lys Glu Asp
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Ala Asp Lys Ile Val Asn Tyr Leu Asp Gln Thr Leu Glu Glu Met Asn
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Arg Thr Phe Thr Met Ala Val Lys Asp Phe Leu Asp Ala Lys Leu Ser
195 200 205

Gly Lys Arg Phe Arg Gln Ala Arg Gly Leu Tyr Tyr Lys Tyr Leu Gln
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Lys Ile Leu Gly Pro Glu Leu Val Gln Lys Pro Gln Leu Lys Ile Gly
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Gln Leu Met Lys Gln Arg Lys Leu Thr Ala Ala Leu Leu Ala Cys Cys
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Leu Glu Leu Ala Leu His His Lys Leu Val Glu Gly Leu Arg
260 265 270

Phe Pro Phe Val Leu His Cys Phe Ser Leu Asp Ala Tyr Asp Phe Gln
275 280 285

Lys Ile Leu Glu Leu Val Val Arg Tyr Asp His Gly Phe Leu Gly Arg

290

295

300

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Glu Cys Ala Gln Thr Arg Lys Ser Leu Glu Glu Ser Gln Ser Ser Val
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His Gln His Ile Phe Thr Ala Pro Ser Gln Gly Met Pro Lys Trp Leu
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545

550

555

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